

MEDICAID TRANSFORMATION GRANT PROPOSAL

STATE OF ARIZONA

Medicaid Health Information Exchange Utility Project (Medicaid HIE Utility)

ARIZONA HEALTH CARE COST CONTAINMENT SYSTEM (AHCCCS)

Arizona's Single State Medicaid Agency

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ABSTRACT

The Arizona Health Care Cost Containment System (AHCCCS) is Arizona's Single State Medicaid Agency, providing health care coverage for over one million Medicaid and SCHIP beneficiaries. The agency initiated a planning process during the past year in anticipation of this grant. AHCCCS is proposing to develop and implement a web-based health information exchange (HIE) utility to achieve the **goal** of giving all Medicaid providers instant access to beneficiaries' health records via electronic connection at the point of service. The electronic health record (EHR) available through this HIE utility will include patient demographics and eligibility information, patient problem lists, medications, lab tests orders/results, radiological results and images, inpatient discharge summaries, and clinical notes. **Federal funds in the amount of \$11,752,500 over the next two years** are requested to support its planning, design, development, testing, implementation and evaluation. This project proposes a sustainable model organized around AHCCCS as one of Arizona's major payers of health care services.

Implementing this HIE utility will transform the AHCCCS Medicaid program and the patient care process. Providing timely patient health information at the point of service will **improve the quality, efficiency and effectiveness** of Arizona's Medicaid program. Real time health information access will result in reduction of medical errors, reduction of redundant testing and procedures, better coordination of care for chronic diseases, increased preventive interventions, reduction in the inappropriate use of the emergency room, and lower administrative costs. When aggregated, these benefits will save significant state and federal taxpayer dollars (in Medicaid, SCHIP, and IHS) as well as beneficiary and provider frustration.

The proposed HIE utility will also provide the infrastructure to support the goals of the Quality and Cost Transparency Initiatives of President Bush and Secretary Leavitt by making relevant information available to Medicaid beneficiaries and providers in a user friendly format.

Developing and implementing a web-based HIE utility and application service provider (ASP) capability within two years will achieve the following **outcomes**:

- Reduction in overall annual acute and long term care Medicaid program medical costs of 3% on average;
- Connection of 35% of AHCCCS providers who will be actively sharing electronic health information through the HIE utility by the end of 2009, 60% by the end of 2010 and over 90% by the end of 2011;
- Reduction in overall Medicaid health system administrative costs of 2% annually through fewer manual medical record reviews, record copying, denial of claims, claims errors, and avoidance of fraud and abuse through effective beneficiary identification;
- Improved quality of care oversight and quality transparency through the provision of timely performance information;
- Improved care coordination for chronic diseases and better coordination between behavioral health and physical health services; and
- Enhanced opportunities for better self-management of chronic illnesses by beneficiaries and their families through access to their health information and online wellness materials.

Project Narrative

Statement of Project/Need

The Arizona Health Care Cost Containment System (AHCCCS) is Arizona's Single State Medicaid Agency, providing health care coverage for over one million Medicaid and SCHIP beneficiaries. AHCCCS is proposing to develop and implement a web-based health information exchange (HIE) utility that will provide authorized Medicaid clinicians, hospitals, long term care providers, ancillary service providers, community based care programs, and managed care health plans instant access to Medicaid beneficiaries' electronic health records (EHR) at the point of service. The health records available through this HIE utility will include patient demographics and eligibility information, patient problem lists, medications, lab tests orders/results, radiological results and images, inpatient discharge summaries, and clinical notes. Federal funds are requested to support the planning, design, development, testing, implementation and evaluation of results of the AHCCCS HIE utility and application service provider (ASP) functions.

AHCCCS' nationally recognized Medicaid managed care approach has consistently provided quality care while producing significant cost savings. However, the program experiences the following challenges and system improvement needs similar to those of other state Medicaid and private sector health care systems.

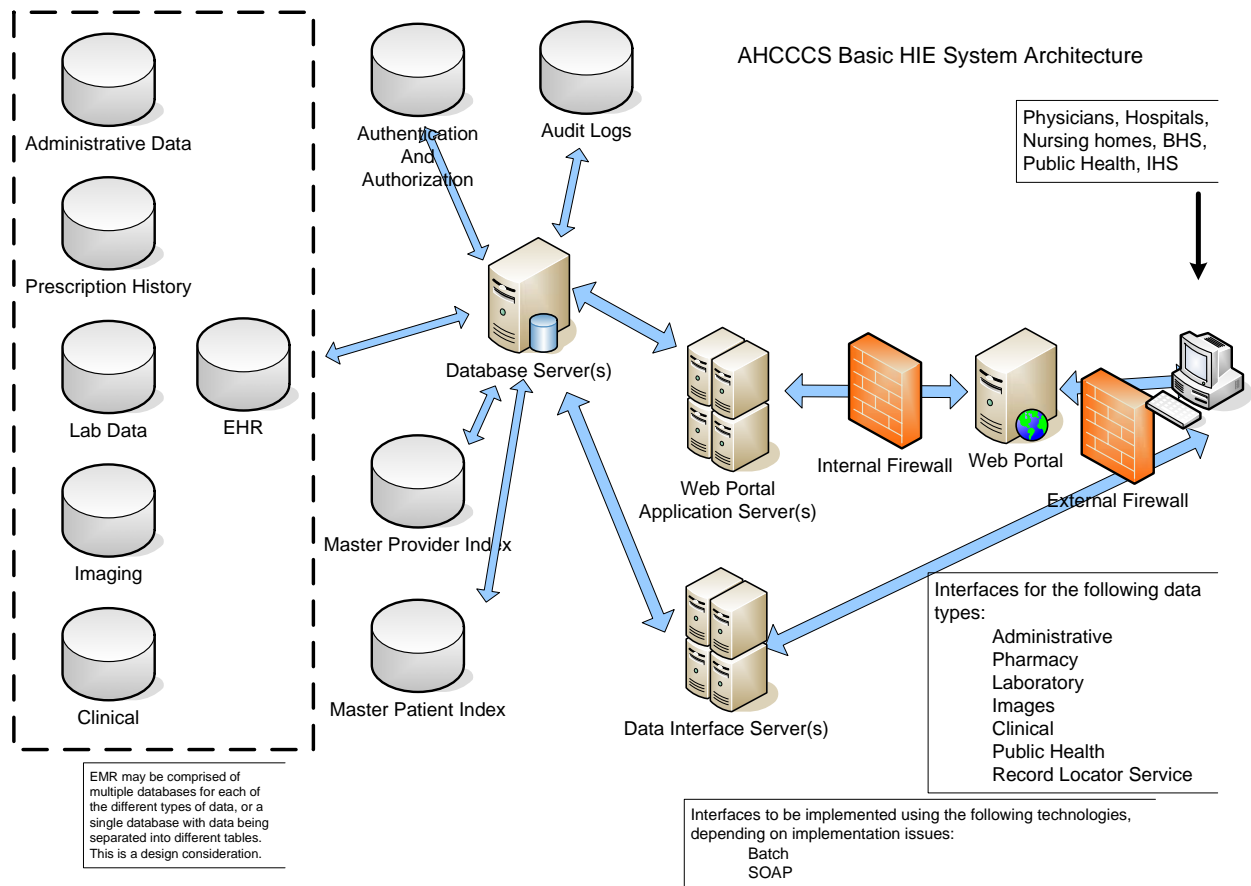
- Costs are increasing significantly faster than state revenues, with AHCCCS experiencing annual average medical cost per member per year (PMPY) increases of 6% to 10%.
- Critical health care information is not available where and when it is needed.
- Lack of point of service information leads to duplicate services and increased chances of errors, delays in care, and polypharmacy problems.

- Inability to exchange information leads to delays in provider payments.
- High capital and maintenance costs lead to slow adoption of health information technology (HIT). Only 15% of Arizona's physicians have electronic health records (EHR) in their practices, and most rural hospitals have only rudimentary hospital information systems.

The HIE utility proposed by AHCCCS represents a quantum leap in improving system effectiveness and affords the greatest opportunity for rapid adoption and real-time exchange of electronic health information. AHCCCS will provide basic EHR functionality as a web based ASP for Medicaid providers who cannot afford the capital outlay to install their own electronic medical record systems. This project will reduce the cost of adoption of EHR/HIE to less than \$1,000 per client terminal for Medicaid providers. It is consistent with the vision for EHR expressed by both President Bush and Secretary Leavitt.

AHCCCS will leverage HIE/HIT efforts that have already been initiated by the Indian Health Service (IHS), Federally Qualified Health Centers, the Veteran's Administration, Arizona Health-E Connection, Southern Arizona Health Information Exchange and several hospital systems in the state. Furthermore, this project will include nursing homes and community based long term care providers.

The following figure displays the system architecture for the proposed HIE utility and shows the connections among data input, data storage, data interfaces, web-portal access, and security protection.



Project Justification

This HIE utility project will be the tool to transform the AHCCCS Medicaid program and the patient care process. Providing access to EHR at the point of service will improve quality, enhance patient safety, increase efficiency, reduce delays, and increase patient confidence in the health care system.

This project will decrease future medical costs for both the state and federal governments (in Medicaid, SCHIP, and IHS). Real time health information access will result in reduction of medical errors, reduction of redundant testing and procedures, better coordination of care for chronic diseases, increased preventive interventions, reduction in the inappropriate use of the

emergency room, and lower administrative costs. When aggregated, these benefits will save significant state and federal taxpayer dollars as well as beneficiary and provider frustration.

The proposed AHCCCS HIE utility will provide the infrastructure to support the Quality and Cost Transparency Initiatives of the President and Secretary by making relevant information available to Medicaid beneficiaries and providers in a user friendly format. Studies and reports by such governmental and non-governmental entities as GAO and RAND support the justification for creating a web-based health information exchange as the best way to achieve tangible savings and quality of care gains.

AHCCCS is a logical champion/catalyst for a project of this magnitude. Achieving statewide deployment of HIE requires a payer that commands adequate market share of membership in every geographic area of the state. AHCCCS is the state's largest single insurer, which gives it considerable leverage with providers to influence the adoption of e-health technology. AHCCCS plans to develop the HIE utility with open source software, which will give other States the opportunity to use and/or install the software applications developed by AHCCCS without costly licensure fees. This can provide significant savings and encourage more rapid HIE adoption by other state Medicaid programs.

While most HIE projects are organized around a hospital and/or a physician practice network, this project proposes a sustainable model developed and managed by AHCCCS as one of Arizona's major payers of health care services. AHCCCS' managed care organizations (MCOs) have contracts with nearly all of the state's private and public hospitals, community medical providers and long term care providers. AHCCCS enjoys unparalleled credibility with acute care and long-term care providers, who expect AHCCCS to take a leadership role in this endeavor. Additionally, AHCCCS is an integral part of the Arizona Health-e Connection

initiative for statewide interoperability for HER which was recently noted in the *New York Times* (September 27, 2006).

Project Goals and Outcome

The project goal is to develop and implement a web-based HIE utility and ASP within two years that will achieve the following outcomes:

- Reduction in overall medical costs of an average of 3% per year associated with prescription errors, diagnostic lab/radiology test redundancy, unnecessary emergency room utilization, claims coding errors and medical errors;
- Connection of 35% of AHCCCS providers, who will be able to actively share electronic health information through the HIE utility by the end of 2009, 60% by the end of 2010 and over 90% by the end of 2011;
- Reduction in overall Medicaid health system administrative costs of 2% annually through fewer manual medical record reviews, record copying, denial of claims, claims errors, and avoidance of fraud and abuse through effective beneficiary identification;
- Improved quality of care oversight and quality transparency by providing timely performance information to providers and beneficiaries;
- Improved coordination of care for chronic diseases and increase preventive interventions;
- Improved coordination between behavioral health and physical health services which will reduce medication errors/abuse and increase case management effectiveness; and
- Enhanced opportunities for better self-management of chronic illnesses by beneficiaries and their families through access to the patient's health information and online wellness materials.

The HIE utility will be developed using open source software tools and will meet standards established by the Office of the National Coordinator for Health Information Technology (ONCHIT), Certification Commission for Healthcare Information Technology (CCHIT), the Medicaid Information Technology Architecture (MITA), as well as industry standards for data exchange (such as HL7, LOINC), and technical standards common to web technologies and internet connectivity. AHCCCS will be an ASP for Medicaid providers providing basic EHR applications including e-prescribing and lab order entry and results reporting. AHCCCS will use a combination of off the shelf software applications and internally developed software interface utilities and applications. These applications will be accessible to providers/users via a graphical interface utility that will be provided through a secure web portal. The system architecture will be designed using MITA compliant open architecture client server technology. Providers will only need an internet broadband connection and a basic computer with web browsing ability to have access. The health information data architecture design and database content management will be constructed to offer the providers/users with a “single patient view” of the beneficiary’s health record.

AHCCCS is very willing to partner with and assist other state Medicaid agencies in adapting the HIE utility to their unique needs and reduce their development costs.

Estimated Impact to Beneficiaries

The AHCCCS HIE utility will make EHR available statewide to authorized providers/users for all one million plus Arizona Medicaid and SCHIP beneficiaries.

In a recent survey, beneficiaries noted that one of their top three concerns was providers not having access to critical medical record information and having to repeat tests or not treating medical conditions because of incomplete medical records. Beneficiary dissatisfaction with

health care delivery is of particular concern among Arizona minority beneficiaries, especially Hispanic and Native American individuals. This is because the system of care for these populations is often fragmented among multiple providers and health delivery systems. Also, it is a challenge for providers to gain access to timely health record information at the time of a beneficiary's visit. The proposed project will resolve this problem and will have a profound impact on providers in the many rural and tribal areas of the state. It will help restore beneficiaries' confidence in the health care delivery system, which should improve their compliance with health care treatment. It will also encourage more productive and positive provider/patient relationships, which may decrease the frequency of malpractice litigation.

The HIE utility will support better chronic disease management by providing nearly real time episode-of-care data to enhance effective medical management of high cost, high risk chronically ill beneficiaries. This project also envisions beneficiaries having access to their own health information, including immunization records, MCO and provider quality of care information, cost of care information; medications lists, and even member case management and patient services plans.

Description of Magnitude of the Transformation/System Change

To best understand the transformational impact of this project, one should consider the impact that electronic exchange of financial information has had on the financial industry and the public's access to online banking and financial management services. Creating this HIE utility and web-based EHR has the potential for the same level of system transformation for the AHCCCS program. While this project is focused on Medicaid, the rest of Arizona's health care industry has been mobilized by the Governor's establishment of the Arizona Health-e Connections Roadmap and a complementary public/private partnership that has already formed

in southern Arizona (SAHIE). AHCCCS' grant application is both timely and essential to ensuring that Medicaid is integrated into these and similar efforts being undertaken in the private sector in Arizona.

Funding this project now will create the best opportunity for Medicaid to take advantage of momentum created for statewide deployment and adoption of HIE. Arizona has focused its planning and development of EHR and HIE on the specific assumption that funds made available by Congress through the Medicaid Transformation Grant will allow AHCCCS to move forward quickly in deploying HIE/HIT for Medicaid. The complementary efforts over the next two years in the private sector will also create unique synergies that will only be possible during this window of time. Within 24 months after implementation of the HIE utility, AHCCCS can expect to have widespread adoption by providers, hospitals, and long term care facilities as private sector efforts occur simultaneously and in concert with the AHCCCS HIE project.

This project will have wide-reaching impact on transforming the system of care for Medicaid beneficiaries in the following ways:

- It will transform AHCCCS' regulatory oversight by enhancing the agency's ability to monitor and ensure quality and access to care.
- Medicaid physician practices will have secure web access to patients' health records, improving provider medical management and interaction with patients by eliminating the problems caused by lost medical information and delays in retrieving lab results and clinical notes.
- Hospital emergency rooms and trauma centers will have access to beneficiary demographics for identification purposes, primary care provider information, medication lists, lab test results, radiological images, problem lists and clinical progress notes. This

will significantly reduce duplication of services and improve integration of hospital and primary care.

- Managed care plans and providers will be able to coordinate care between physical health and mental health care.
- Online provider access to immunization records updating, e-prescribing, lab test ordering, and results reporting will improve provider office administrative efficiency without providers having to make significant capital investment in computer systems and software.
- It will provide critical communication channels to providers for public health alerts and reporting that will increase the integration of responses to bioterrorism, pandemics and other public health outbreaks.
- AHCCCS will be able to share its HIE utility software so that other state Medicaid programs will not have to reinvent the same applications.

Description of Sustainability of the Project

The HIE utility will be managed on an on-going basis out of the AHCCCS data center. AHCCCS information technology (IT) staff will continuously support the software applications maintenance. AHCCCS MCOs will provide necessary provider training and orientation to HIE/HIT and, as necessary, even internet connectivity. Ongoing costs of HIE/HIT system support will be part of the AHCCCS IT budget. AHCCCS MCOs will include requirements in their acute care and long term care provider contracts to connect and participate in the AHCCCS HIE utility, including updating beneficiary health record information. AHCCCS' work will be reinforced by statewide efforts, such as the State of Arizona's funding of rural health information projects, and by other private and public sector initiatives. The savings in medical costs will

produce a positive financial return on investment and impact positively on waiver budget neutrality trends.

The Governor has signed an Executive Order committing continued support to the full statewide deployment of HIE/HIT in Arizona. The Governor is also committed to providing the state's portion of funding for HIE/HIT adoption and deployment, including ongoing operational funding for AHCCCS. Ongoing funding for the HIE utility will be contained within AHCCCS' administrative budget. No additional statutory changes are required. AHCCCS currently supports similar data storage and web based system operations including the web portal for AZ 2-1-1, a data warehouse, and AHCCCS' online eligibility and claims status web applications. The incremental additional staffing and system maintenance costs will be under \$2 million per year. The HIE utility will also be integrated with Arizona's DHHS funded Quality Transparency Initiative announced by Secretary Leavitt and currently operational as the AZ HealthQuery project.

Ongoing funding for provider/user access is expected to be value driven, so that costs for ongoing connectivity and software maintenance will be partially borne by transaction fees charged to provider organizations receiving benefits from the AHCCCS ASP services.

Evaluation Plan

AHCCCS will fund an independent external review and evaluation of this project by a qualified firm/vendor. Beginning in fiscal year 2008, AHCCCS will solicit qualified vendors to provide an evaluation of the project's outcomes, project management, sustainability and impact on overall medical and administrative costs of the AHCCCS program. The evaluation will assess the degree to which AHCCCS has accomplished the stated goals and outcomes using grant funds. The evaluation will include provider and member satisfaction. The evaluation will

be available to other states to provide information on how AHCCCS applied HIE standards, transferable software, and lessons learned.

The evaluation scope of work will include the following:

- Review and validation that grant funds were used for the approved purposes.
- Evaluation/validation of estimated actual and projected Medicaid program savings and return on investment from implementation of the HIE utility.
- Validation of the level of actual and projected provider use of the AHCCCS HIE utility.
- Validation of provider and beneficiary satisfaction and impact on provider administrative efficiency.
- Validation of the level of “*statewideness*” of the HIE utility by determining the urban and rural participation rates.
- Validation of the sustainability of the HIE infrastructure and software applications by AHCCCS, and the potential transportability of the software applications and interfaces to other state Medicaid programs for their rapid adoption of an HIE utility.

Description of Project Implementation Readiness

AHCCCS started planning for the HIE project one year ago after the Governor’s Executive Order created the Health-e Connection Roadmap. Web design and application development are among the agency’s proven competencies. Additionally, AHCCCS has access to the significant technology and bio-informatics expertise of Arizona State University. Arizona was recently cited by Janet Marchibroda, CEO of the Washington, DC-based *eHealth Initiative*, as one of the few states to complete a statewide strategy for the adoption of HIE/HIT. This will ensure that the Arizona health care industry, employers, consumers and regulators will remain involved to give this project a high degree of support and ongoing collaboration.

AHCCCS operates a 24/7, 365 days/year, data center operation with off-site backup, and an IT staff of over 150 employees and contractors fully capable of supporting this effort. In 1993, AHCCCS designed and implemented the nation's first Prepaid Medicaid Medical Information System (PMMIS). In 1998 AHCCCS successfully implemented the country's first joint state Medicaid MIS project using its well-functioning PPMIS for another state. The Hawaii Arizona PMMIS Alliance (HAPA) has saved millions of federal Medicaid dollars through the avoidance of duplicative IT systems. In 2003 AHCCCS successfully implemented Imaging Project for its claims and encounters. In 2005, AHCCCS implemented the first statewide AZ 2-1-1 web based portal to provide Arizona citizens with web based access to health and human services information and to support the state's emergency management system in a time of disaster. In partnership with One-E-App, a non profit electronic eligibility vendor, AHCCCS has developed the Arizona version of a web-based electronic eligibility application (Arizona Health-e Application). AHCCCS IT staff developed the software for the agency's own long term care eligibility application and implemented a data warehouse of AHCCCS eligibility, claims encounters, pharmacy, and MCO and provider data to support quality management decisions and cost analysis.

AHCCCS has a head start on other Medicaid states because it already has many of the prerequisites to create a successful HIE utility, including:

- a common AHCCCS master patient ID;
- a master registry of Arizona physicians, hospitals, and long term care nursing home and community based care sites;
- online eligibility information; and

- basic components of beneficiary health information using patient claims and encounter data stored in a data warehouse.

In May 2006 the agency initiated the detailed planning for AHCCCS HIE Initiative in anticipation of the Medicaid Transformation Grant, bringing together representatives from AHCCCS management, the Arizona Department of Health Services, MCOs, hospitals, and long term care providers. Three workgroups were formed to identify the clinical, technical and financial aspects of building the AHCCCS HIE utility and validate the feasibility of the project. These workgroups developed high level requirements and conceptual technical architecture for a Medicaid HIE solution.

AHCCCS' successful IT project portfolio and infrastructure demonstrate that the agency has the core competency and expertise to achieve the goals of this project and create the HIE utility within the timeline of the grant. The result will be improved care for Medicaid beneficiaries and cost savings for both the state and federal governments.

Project Timeline

October 2006 – December 2006	Initiation, High Level Requirements, Scope, Timeline, and High Level Design
January 2007 – March 2007	Development Approach, Initial Planning, Final Requirements, Initial Design (including RFP development if required)
April 2007	Detailed Project Plan Completed
May 2007	Detailed Design Begins
June 2007 – July 2007	System Design and Data Architecture and Mapping Begins
July 2007 - October 2007	Detailed Design Complete, Data Architecture and Database Structure Completed, Software Development Begins
October 2007 – July 2008	Software Development, Testing Plan, Hardware Acquisition, Pilot Plan, Pilot Training
August 2008 – September 2008	Testing
October 2008 – January 2009	Pilot Sites
February 2009 – March 2009	Incorporate Lessons Learned from Pilot, Prepare for Full Product Release
April 2009	Full Release and Scale Up

Budget Description

Funding is requested to support the planning, design and implementation of the Medicaid HIE utility and provider practice application for the storage, retrieval and transmission of Medicaid beneficiary health record information, including e-prescribing and lab and diagnostic order entry and results reporting.

Personnel

Positions	FTE	Annual Cost	Justification
Project Manager	1.0	\$95,000	This position is a professional certified by the Project Management Institute responsible for managing the project over the planning and development lifecycle.
Senior Business Analyst	1.0	\$85,000	This position is responsible for documentation and mapping of business processes, documentation and validation of business requirements, system specification, test plans and documentation of project deliverables.
Healthcare System User Analyst	2.0	\$150,000	These two positions work with the Senior Business Analyst to develop detailed user requirements, system specifications and application design and testing.
Data Architect Engineer	1.0	\$105,000	This position is the chief database designer and developer and is responsible for creating the EHR data warehouse relational data structures.
Database Mapping Specialist	1.0	\$80,000	This position works with the Data Architect Engineer to map data by source and definition into the data structure.
Application Development Manager	1.0	\$95,000	This position is responsible for overseeing contract application developers and software engineers.
Senior System Program Analyst	1.0	\$85,000	This position is responsible for creating technical system design instructions, security requirements and application documentation for programmers and software engineers.
Certified Claims Coding Specialist	1.0	\$70,000	This position works with the Data Mapping Specialist and provides claims data and data source validation specifications.
Web Developer	1.0	\$70,000	This position will plan and design website features, links, web site look and applications and for the web
Provider Relations Specialist	1.0	\$75,000	This position coordinates provider input and requirements documentation, develops provider training plans, and evaluates and resolves provider participation and adoption issues.
Administrative Assistant III	1.0	\$45,000	This position supports the project team, managing documents, meeting minutes and team office administrative support and logistics.
TOTAL	12.0	\$955,000	Salaries

Professional and Vendor Services

Description	Fiscal 2007	Fiscal Year 2008	Justification
System Programmers and Application Developers	\$ 1, 895, 000	\$ 2, 850, 000	Funds would be used to hire contract programmers and application developers to create public domain open source software interfaces and HIE web based applications.
Arizona Health-e Connection and Southern Arizona Health Information Exchange Interface	\$ 650,000	\$ 650,000	Consultant charges for joint development of interfaces and software specifications with the other two Arizona HIE public/private partnerships in Arizona.
Vendor Software Fees	\$255,000	\$ 655,000	Off the shelf vendor software for Web based provider applications that are integrated with public domain software develop for the HIE utility.

Total Estimated Requirement of Each Budget Year

Budget Category	Fiscal Year 2007	Fiscal Year 2008	Description
Personnel	\$955,000	\$983,650	See personnel detail on page 14; second year includes salary adjustment
Employee Related Expenses	\$276,950	\$275,400	Social Security, insurance benefits, retirement using statewide factor of 28%
Professional Services	\$1,895,000	\$2,850,000	Contracted application development staff
Vendor Software	\$255,000	\$655,000	Off the shelf software products for HIE provider applications
Travel/Training	\$31,500	\$36,000	
Supplies and Services	\$43,000	\$78,000	Office supplies and services
Equipment	\$485,000	\$992,000	Computer hardware
Rents/leases	\$182,000	\$182,000	Office equipment and space leases
Arizona Health-e Connection Co linkages	\$650,000	\$650,000	Development of linkages to ensure Medicaid HIE will connect with other state public and private HIE efforts defined in the Roadmap
Software Licenses	\$52,000	\$225,000	Application license purchase fees
Total	\$4,825,450	\$6,927,050	Total request \$11,752,500